



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,004	06/21/2005	Yasushi Takano	0033-1008PUS1	8050
2292 7590 05/12/2011 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER ABU ALL SHUANGYI				
ART UNIT		PAPER NUMBER		
1731				
NOTIFICATION DATE		DELIVERY MODE		
05/12/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

### Office Action Summary

**Application No.**

10/540,004

**Applicant(s)**

TAKANO ET AL.

**Examiner**

SHUANGYI ABU ALI

**Art Unit**

1731

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/23/2009 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 6-7, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,617,409 to Yukawa et al., in view of U. S. Patent No. 4,931,505 to Miyazaki et al.

Regarding claims 1-3, 7 and 11, Yukawa et al. disclose a flaky aluminum pigment, which has a coating made from a copolymer resin composition. The copolymer resin is made from polymerizable monomers such as phosphate group monomer, phosphoric acid monomer, methacrylate base monomer and other polymerizable polymers (col. 1, line 13; col. 2 line 1; line 5; line 7 and col. 3, lines 28-29). Yukawa et al. disclose that 2-methacryloyloxyethyl acid phosphate is one of the phosphoric acid monomer used in the copolymerization (col. 2, line 61).

But they are silent about the copolymer having alkyl fluoride group as applicants set forth in claim 1.

However, Miyazaki et al. disclose a copolymer resin composition, which is suitable for coating with pigment, a fluorine-containing copolymer of a polyfluorocarbon chain-containing monomer with a hydrophilic group-containing monomer wherein said hydrophilic group can be phosphoric acid ester. The polyfluorocarbon chain-containing monomer may usually be a monomer having a polyfluoroalkyl group, preferably a perfluoroalkyl group, having from 2 to 18 carbon atoms. The copolymer is water soluble and the fluorine and phosphoric group are in the separated chain.

Therefore, it would have been obvious to one of ordinary skill in that art at the time of invention to utilize copolymer disclosed by Miyazaki et al. to coat the flaky aluminum pigment, motivated by the fact that Miyazaki et al., also drawn to coating

composition, disclose that copolymer comprising phosphate and fluoride groups has excellent weather resistance (col. 1, lines 4-6).

Regarding claims 2 and 3, Miyazaki et al. disclose that the hydrophilic group-containing monomer may be an acrylic, methacrylic, vinyl or allyl compound, which has a hydrophilic group.

Regarding claim 6, Miyazaki et al. disclose that the copolymer resin composition can be used in solvents (col. 5, lines 37-50).

Regarding claim 9, Yukawa et al. disclose a coating composition, which contains thermosetting resin such as polyester (col. 4, line 54), used in electrostatic coating (col. 5, line 57).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over combined teaching of U. S. Patent No. 6,617,409 to Yukawa et al. and U. S. Patent No. 4,931,505 to Miyazaki et al., further in view of U. S. Patent No. 6,489,396 B2 to Nakamura et al.

Regarding claim 4, Yukawa et al. disclose that 2-methacryloyloxyethyl acid phosphate is one of the phosphoric acid monomer used in the copolymerization (col. 2, line 61).

Although the Yukawa et al. and Miyazaki et al. as combined teach a flaky pigment coated with a copolymer comprising alkyl fluoride and phosphate groups, they are silent about using perfluorooctylethyl acrylate in the copolymer composition.

However, Nakamura et al., also drawn to the study of a copolymer composition suitable for metal coating, disclose that 2-methacryloyloxyethyl acid phosphate (col. 7,

lines 36 and 37) and perfluorooctylethyl acrylate (col. 8, line 51 and 52) used as monomers in the copolymer resin composition.

Therefore, It would have been obvious to one of ordinary skill in art at the time of invention by applicant to use Nakamura et al. copolymer in the flaky pigment of combined teaching of Yukawa et al. and Miyazaki et al., motivated by the fact that such resin composition will render good weather resistance to the pigment (col. 1, lines 10-35).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over combined teaching of U. S. Patent No. 6,617,409 to Yukawa et al. and U. S. Patent No. 4,931,505 to Miyazaki et al., further in view of U. S. Patent No. 5,216,081 to Mohri et al.

Regarding claim 5, the combined teaching of Yukawa et al. and Miyazaki et al. teaches a pigment coated with a copolymer resin composition set forth above, but they are silent about the content of fluoric and phosphate group in the composition as applicant set forth in claim 5.

However, Mohri et al., also drawn to a copolymer resin composition suitable for pigment coating, disclose a copolymer composition having a fluoro-unit content in the range of 20 - 60 mole % (col. 2, lines 40-41), other copolymerizable monomers content, which can be phosphate unit, in a range of 0 – 45 mole% (col. 5, lines 56-60) and a molecular weight in the range of 3000 to 100000 (col. 7, lines 14-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to make a flaky pigment with copolymer coating having the mole ratio

of Mohri et al., also drawn to coating composition, motivated by the fact the copolymer with such a ratio has good weather resistance and stain resistance (col. 2, lines 43-45).

Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over combined teaching of U. S. Patent No. 6,617,409 to Yukawa et al. and U. S. Patent No. 4,931,505 to Miyazaki et al., further in view of U. S. Patent No. 1,941,398 to Iliff et al.

Regarding claims 8 and 10, the combined teaching of Yukawa et al. and Miyazaki et al. teaches a pigment coated with a copolymer resin composition set forth above. But they are silent the composition comprising binder and can be used in the composition.

However, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to use binder in the coating composition, motivated by the fact that Iliff et al., also drawn to coating composition, disclose that the binder is very important in the coating composition to provide durability( col. 1, lines 41-45).

### ***37 CFR 1.132 & Response to Arguments***

The declaration under 37 CFR 1.132 filed 06/16/2010 is insufficient to overcome the rejection of claims based upon the unexpected result as set forth in the last Office action because: The data provided are not commensurate in scope with the broadly claimed invention. The applicant only present a few examples to represent the unlimited alkyl length of fluorine and phosphorus group. Evidence of unexpected results

must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356. To establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside (i.e. as well as the upper and lower limits) the claimed range to show the criticality of the claimed range. **In re Hill 284 F.2d 955, 128 USPQ 197 (CCPA 1960).**

The applicant argues that the Miyazaki reference discloses the function of its copolymer (B). Thus, the Miyazaki reference states that it is considered that when the coating layer is in a dried state, it presents a water repellant surface by virtue of the polyfluorocarbon chain, but when exposed with a large amount of water, the polyfluorocarbon chain withdraws from the surface and the hydrophilic groups transfer to the surface, whereby the surface becomes hydrophilic. Therefore, in the copolymer (B) of the Miyazaki reference, as the "hydrophilic group" or the "polyfluorocarbon chain" reversibly transfers to or withdraws from the surface of the coating layer, in accordance with the environment, it appears that the copolymer (B) of the Miyazaki reference is present in such a state that it is not absorbed to other substances". The Examiner respectfully submits that Miyazaki disclose the above property of their invention after the coating is formed on a substrate. Furthermore, Miyazaki discloses in col. 6, line 32-36 that the composition of their invention is applied to the metal surface.



### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHUANGYI ABU ALI whose telephone number is (571)272-6453. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shuangyi Abu-Ali/  
Examiner, Art Unit 1731